

## Anaphylactic reaction to Tc-99m sestamibi (Cardiolite) during pharmacologic myocardial perfusion imaging

Bilal Mujtaba, MD,<sup>a</sup> Michael Adenaike, MD, Vamsee Yaganti, MD,<sup>a</sup>  
Najda Mujtaba, MD,<sup>b</sup> and Diwakar Jain, MD<sup>a</sup>

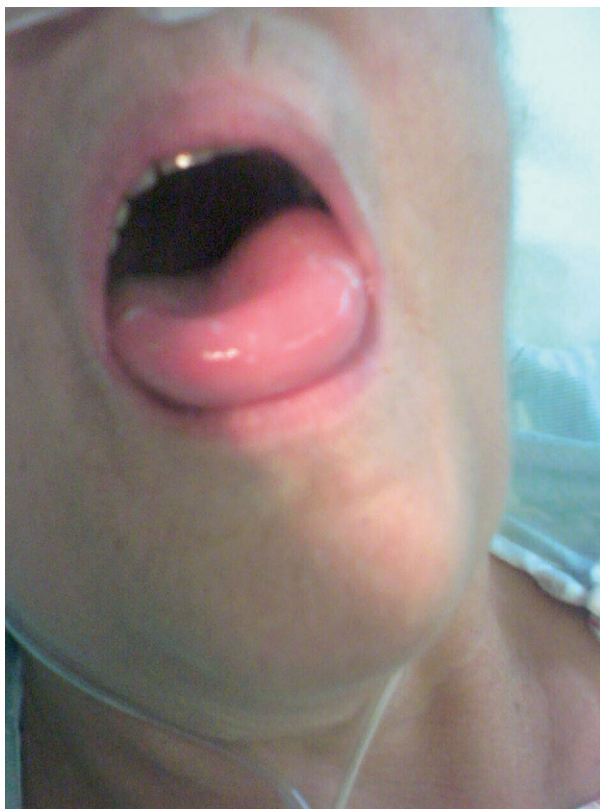


**Figure 1.** Image obtained 15 minutes after onset of anaphylactic reaction showing development of macroglossia. It should be noted that intravenous epinephrine and diphenhydramine were administered 12 minutes before the image was obtained.

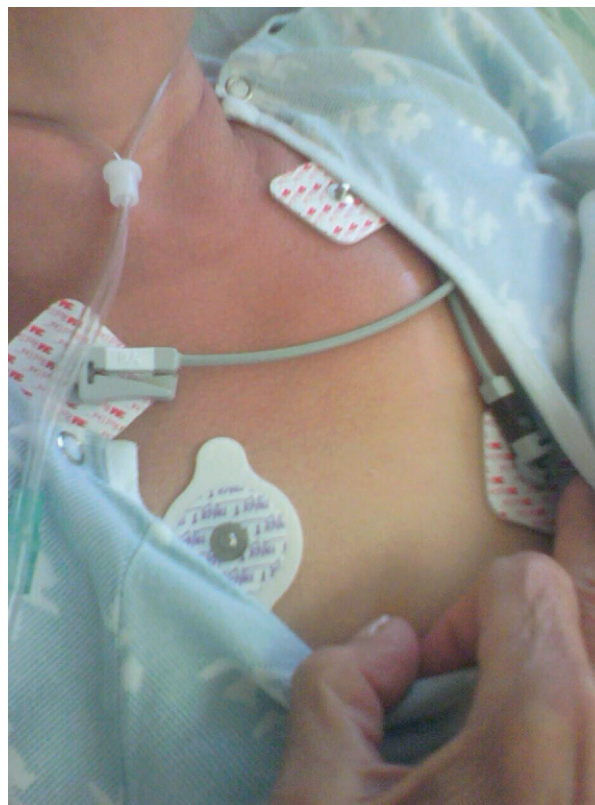


**Figure 2.** Image obtained 15 minutes after onset of anaphylactic reaction showing development of pruritic erythematous rash on chest. It should be noted that intravenous epinephrine and diphenhydramine were administered 12 minutes before the image was obtained.

**Case presentation.** A 63-year-old white woman presented to our hospital complaining of nonpleuritic

exertional chest pain. She had a history of hypertension, carotid artery stenosis, type 2 diabetes mellitus, hypothyroidism, and smoking. There was no history of drug or seasonal allergies. Findings from the patient's physical examination, routine laboratory tests, and electrocardiogram were normal. She was scheduled for same-day rest-stress dipyridamole technetium 99m sestamibi myocardial perfusion imaging. Ten millicuries of Tc-99m sestamibi was injected at rest. Immediately thereafter, acute shortness of breath and generalized itching developed. Examination revealed tachypnea (20 breaths per

From the Cardiovascular Imaging Laboratory, Department of Cardiovascular Imaging, Drexel University College of Medicine, Philadelphia,<sup>a</sup> and Sacred Heart Hospital, Allentown,<sup>b</sup> Pa.

Reprint requests: Diwakar Jain, MD, Drexel University College of Medicine, 245 N 15th St, MS 470, Philadelphia, PA, 19102; [Diwakar.Jain@drexelmed.edu](mailto:Diwakar.Jain@drexelmed.edu).

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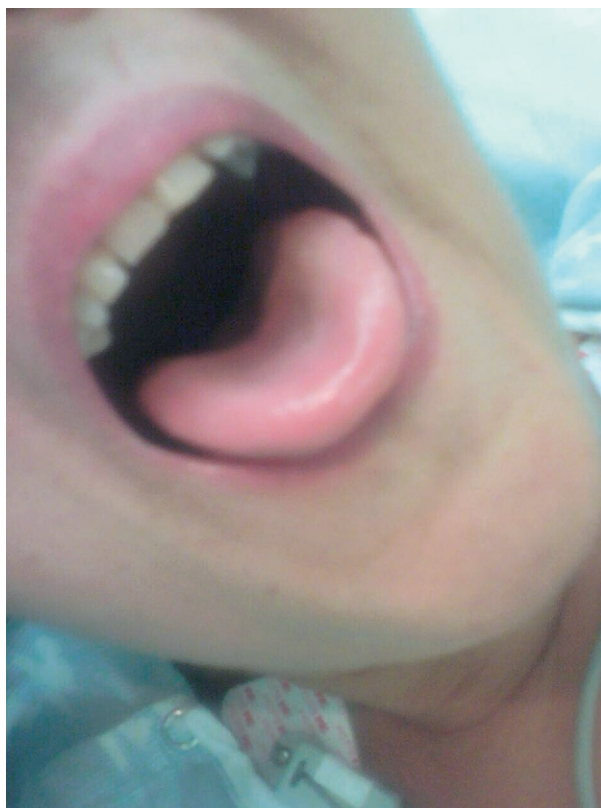


**Figure 3.** Image obtained 60 minutes after onset of anaphylactic reaction showing resolution of macroglossia.

minute), painless macroglossia (Figure 1), wheezing in bilateral lung fields, and a nonblanching pruritic maculopapular rash on the chest (Figure 2). A presumptive diagnosis of anaphylactic reaction to Tc-99m sestamibi administration was made, and intravenous epinephrine and diphenhydramine were administered. There was an immediate and dramatic improvement in the patient's symptoms, with resolution of macroglossia (Figure 3) and shortness of breath. The pruritic rash resolved gradually over a period of 2 days (Figure 4). A 24-hour period of observation in the intensive care unit was uneventful. Five days later, the patient underwent dipyridamole thallium stress-rest imaging without complications. Single photon emission computed tomography revealed normal myocardial perfusion and a normal left ventricular size and function (Figure 5).

**Discussion.** According to the manufacturer, common adverse reactions ( $>0.5\%$ ) associated with Cardiolite (Tc-99m sestamibi) (Bristol-Myers Squibb Medical Imaging, North Billerica, Mass) include nausea, headache, parosmia, angina, and ST-segment changes on electrocardiography.<sup>1</sup> However, rare and fatal adverse reactions ( $\leq 0.5\%$ ), such as seizures, urticaria, angioedema, arrhythmia, syncope, and severe hypersensi-

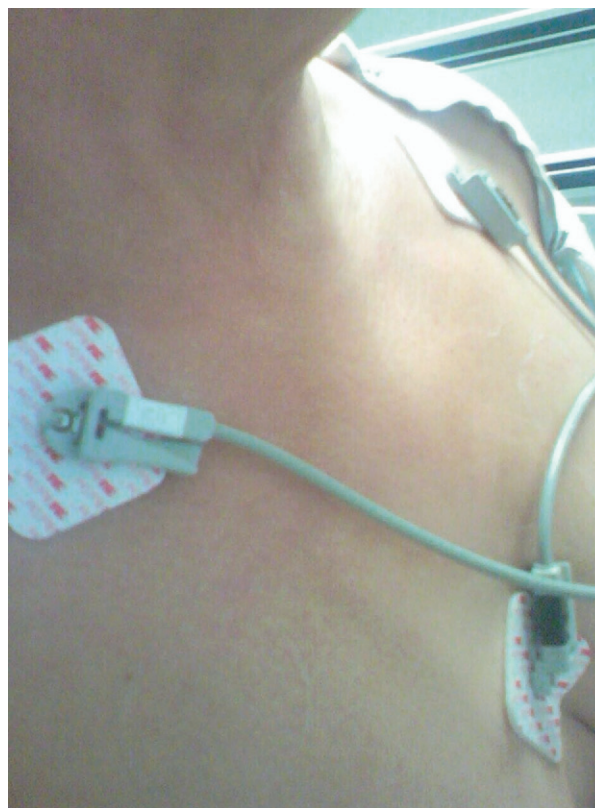


**Figure 4.** Image obtained 60 minutes after onset of anaphylactic reaction showing improvement in pruritic erythematous rash on chest. The erythematous rash completely resolved over a period of 48 hours.

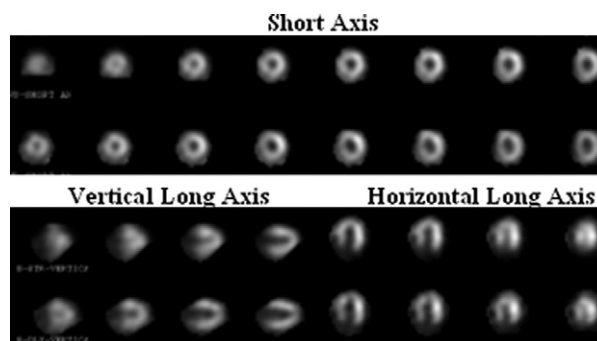


**Figure 5.** Short-axis and vertical and horizontal long-axis slices showing no regional perfusion abnormalities. The left ventricle is normal in size.

tivity reactions, can occur after Cardiolite administration.<sup>1</sup> To our knowledge, only 1 case of anaphylactic reaction (erythema multiforme) to Cardiolite has been reported in the literature.<sup>2</sup>

In our patient acute macroglossia, respiratory distress, and a pruritic maculopapular rash developed shortly after the administration of Cardiolite. Her medication regimen included lisinopril and hydrochlo-

rothiazide, which can cause anaphylaxis. However, she had been taking these medications for 10 years, and further continuation of these medications did not cause any complications. Thus the anaphylactic reaction in our patient was most likely a result of Cardiolite. Because of a steadily increasing incidence of coronary artery disease worldwide, radiopharmaceutical tracers such as Tc-99m sestamibi (Cardiolite) will be used more commonly. Hence the occurrence of rare and potentially fatal adverse reactions may be seen more frequently.

## Acknowledgment

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## References

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